

6.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

6.1 Socioeconomic Factors

The subject site is zoned C (commercial). The proposed facility is consistent with land use within the immediate vicinity. The proposed facility will be consistent with the official municipal land use plan outlined in the *Town of Beaufort Strategic Approach for Growth* (1999). Land use in the immediate vicinity to the north, across Old Channel, and to the east, across Gallants Channel, which encompasses the Town of Beaufort, is mixed commercial, residential and maritime. Land use to the south is dedicated to the Rachel Carson NCNERR, while land use to the west, across Bulkhead Channel, on Radio Island is mixed commercial, residential and maritime.

Residential areas within the area range from mid-level to upper-level income areas and did not appear to include minority neighborhoods. As such the proposed project will not have adverse effects on minority populations. According to interviews with staff at the Planning Departments in Carteret County and the Town of Beaufort, the proposed project will have no negative impact on socioeconomic factors.

Negative comments were not noted in interviews conducted with personnel at municipal planning offices in Carteret County and the Town of Beaufort. Prior development and construction on Pivers Island has not been a source of controversy according to interviews with local planning departments.

6.2 Radon and Other Geologic Hazards

Radon is an odorless, colorless, carcinogenic gas, which results from decay of naturally occurring radioactive elements found in rocks and certain sediments. Radon gas can enter buildings through openings in the foundation, sumps, or other spaces, and may accumulate in harmful quantities within enclosed spaces, and is of concern in residences and other buildings.

According to the EPA *Map of North Carolina Radon Zones* (2002), the Carteret County area is considered to be an area with less than four pico curies per liter (pCi/L) geologic radon potential. Further testing would be necessary to provide a greater degree of assurance that radon contamination is not present at levels of concern at the subject site. Based on available information, the risk of radon contamination at the subject site is estimated as low.

According to an EPA *Map of Seismic Hazards, Contiguous United States* (1997), and the USGS Central and Eastern United States Hazard Maps (1996), the eastern portion of North Carolina is considered to be outside the seismic hazard area.

According to the NCGS *Geologic Map of North Carolina* (1985), there are no fault systems within the vicinity of the subject site. This map depicted the Suffolk Scarp located $38 \pm$ miles to

the north-northwest of the subject site. Additionally, the USGS *National Seismic Hazard Map* (2002) did not show active fault systems within the Coastal Plain Geophysical Province.

The proposed project will not be constructed on, or result in any direct or indirect disturbances to slopes greater than 15 percent. Slopes on Pivers Island range from 0.10 percent to 1.0 percent.

Other geologic hazards such as subsidence and collapse features, landslide scarps and faults, etc., were not apparent at the subject site.

6.3 Sensitive Receptors

The stringency of environmental quality required by regulatory agencies depends significantly on the location of sensitive receptors that could be affected by any contaminants, which are present at or could migrate from the subject site.

Sensitive receptors in this vicinity include occupants on Pivers Island; aquatic life in the nearby estuary, rivers, streams, and other surface waters in the vicinity; any nearby water supply wells; nearby basements; and residents within the viewshed of the proposed facility.

During the site visit conducted 28 and 29 April 2003, one active water supply well was located on the portion of the NOAA property on the east side of the statistics building. This well (Well #2–Ecology Well; public water supply #0416439) was found in the North Carolina Department of Environmental Health (NCDEH) database indicated the well extends to a depth of 380 feet BGS. Interviews conducted with NOAA personnel during the site visit indicated that this well supplies the research laboratory with untreated water, which is used for experimentation purposes only. This well is not located within the area to be disturbed by construction or by future operation of the proposed facilities, and will not be affected by the project.

Two inactive wells were also found on the subject site during this site visit. These observed wells were previously disconnected from pumping and distribution systems. According to the USGS Water Wells database, one well (CT-056 US Biological Station, site identification #344305076401901), which was utilized by the USGS, extends to a depth of 269 BGS. The other inactive well was identified in the federal Public Water System (PWS) and was listed as PWS identification #NC0416439. According to the PWS Violations and Enforcement database maintained by the EPA Office of Drinking Water, a total of 15 enforcement actions were undertaken with regard to the water supply system, which was located on the west side of the Fisheries Laboratory and Library Building. As a result of non-compliance at the site and two notices of violation were issued for non-compliance. These actions occurred between July 1993 and August 1995. NOAA personnel indicated that the PWS was deactivated in 1998 when the drinking water supply was converted over to the newly installed municipal system. Although these water sources were observed to be inactive, records listed these as active.

The well that is just west of the existing main building (directly north of the site for the laboratory and administration building) will be used as the untreated water supply for the laboratory in the new facility. It will not be used for drinking water.

SEA, Ltd. requested information on 17 April 2003 from the Carteret County Health Department regarding records for groundwater wells and septic systems within the immediate vicinity of the subject site. According to the Carteret County Health Department, letter dated 1 May 2003, a septic system, which was reported with chronic failures, prompted a notice of violation from the health department. The septic systems were depicted on site plans provided by NOAA on 24 April 2003, as built drawings by Bibb & Associates, *NOAA Fuel Delivery System Design and Soil Contamination Testing* (1993). These drawings showed six septic systems on the Pivers Island portion of NOAA's property: one on the northern portion of the NOAA property; one on the eastern portion of the NOAA property; three on the southern portion of the NOAA property; and one on the western portion of the NOAA property. According to information obtained during the above-mentioned site visit, the drinking water well and the septic system have been deactivated and removed. During an interview on 29 April 2003, Mr. John N. Young, Public Works Director with the Town of Beaufort, verified that the entirety of Pivers Island now utilizes the water and sewage systems for services via a cross channel piping system. None of the proposed facilities will be located on or near a well or septic system, and will have no direct physical impact on existing wells or septic systems. Based on interviews with the sewer and water system designer, the existing public water supply and municipal sewage system has sufficient capacity for the proposed development.

Property within the general vicinity uses municipal water for domestic and industrial purposes, according to local government officials in the Town of Beaufort.

Currently, the Town of Beaufort provides potable water to the site and wastewater treatment.

Based on the findings of this investigation, further review of sensitive receptors is not warranted at this time.

6.4 Air Quality

The entire Wilmington Region is categorized as an attainment area, and as such, Pivers Island is in an attainment area. The proposed facility is not a listed categorical source of air emissions, regulated under the North Carolina air regulations. The heating system will be an electric one and, as such, will not exceed the North Carolina permit exemption level of 10,000,000 British Thermal Units (BTUs) for emission sources related to heating systems. According to Mr. Terry McCall with the North Carolina Division of Air Quality (NCDAQ), interviewed by telephone on 8 May 2003, only emission systems related to heating systems with outputs of more than ten million BTUs, or heating systems that area used in a production process require permitting. The facility will not be a source of air emissions exceeding the State of North Carolina permit exemption level of five tons per year for each of the following: carbon monoxide (CO), oxides of nitrogen (NOX), sulfur dioxide (SO₂), particulate matter-ten microns (PM₁₀), volatile organic compounds (VOC), and lead (Pb). As such, an air permit is not required, and the facility will not be inconsistent with the North Carolina State Implementation Plan (SIP) under the Clean Air Act (CAA). Based on the scope of the proposed project, Mr. McCall did not anticipate negative impacts with regard to air emissions.

6.5 Water Quality

The proposed action will not result in any significant increase in water consumption; will not require groundwater withdrawals; will not alter any natural water courses; and is not located within a watershed leading to any drinking water source. As such there is no reason to expect the facility to alter water supplies.

According to the North Carolina Division of Water Quality (NCDWQ), *General Map of the White Oak River Basin* (1998), reviewed on 2 April 2003, 14 percent of the waterways within the basin are monitored impaired waters. In addition, the NCDWQ map, *North Carolina Water Supply Watershed* (1999), indicated that the White Oak River Basin is not a water supply watershed.

According to the EPA watershed database, *Index of Watershed Indicators* (1999), reviewed on 2 April 2003, no significant source water impairment for either surface water or groundwater was noted within the vicinity of the subject site. The White Oak Watershed is characterized by the EPA as a low vulnerability area, while the estuary is characterized as being a moderate vulnerability area. No fish consumption advisory areas were noted for the estuary, or connected rivers and streams. The White Oak River Basin is not identified by the state of North Carolina as a watershed not meeting the CWA standards.

According to the NCDEQ, *Waterbody Reports for the White Oak Watershed* (1998), waters within the immediate vicinity (Gallants Channel, Bulkhead Channel, Morehead City Channel, or Beaufort Inlet) are not listed as impaired waterbodies.

According to Carteret County, *2000 Annual Drinking Water Quality Report, North River Water System* (2001), and *2000 Annual Drinking Water Quality Report, Merrimon Community Water System* (2001), both reviewed on 1 April 2003, drinking water within the county meets minimum federal and state primary drinking water quality standards. Both the North River Water System and the Merrimon Community Water System utilize groundwater pumped from the Castle Hayne Aquifer. Based on the USGS, *Hydrogeologic Framework of the North Carolina Coastal Plain* (1996), Carteret County is not within an area affected by water-level declines due to groundwater pumpage.

During a telephone interview with Ms. Noelle Lutheran, with the NCDWQ, on May 2003, the current NOAA complex (constructed late 1960s and earlier) would not have a state stormwater permit because the State of North Carolina did not issue permits prior to 1988.

The proposed project shall comply with Federal and North Carolina regulations concerning permits for discharge of stormwater associated with construction activities. All site plans for the proposed project to include, the new main laboratory and administration building, new interpretive kiosk, new vehicle access bridge, and upgrade projects including the turtle pen and seawater supply system, and boat ramp and docks, will be submitted to the NCDWQ prior to permitting.

Based upon the Civil Design Engineer's consultation with the NCDWQ, the proposed project appears to qualify for the low-density option, as governed by state stormwater regulations, and, therefore, this project is not considered to pose an adverse affect to the environment with regard to non-point source pollution caused by stormwater runoff.

6.6 Coastal Zones

In 1974 the North Carolina General Assembly enacted the North Carolina Coastal Area Management Act (CAMA), which laid down a blueprint for developing land use plans for the 22-county coastal area, identifying critical areas in need of protection, or areas of environmental concern (AECs), and installing a permit system to guide land development within these critical areas. Under the CAMA the state may acquire largely undisturbed land and preserves them for future research, education and non-disruptive public recreation. The federal Coastal Zone Management Act of 1972 provides funding to acquire coastal natural areas.

The North Carolina Coastal Resources Commission designates the entire area of Carteret County as a Coastal Zone Management Area. Enforceable policies of the Program include fisheries management, wetlands management, dunes management, non-point source pollution control, point source pollution control, shoreline sanitation, air pollution control, and coastal lands management. Advisory policies include coastal natural resource areas, coastal natural hazard areas, waterfront development areas, public beaches, natural areas, wildlife management areas, recreational areas, and historic properties.

According to Mr. Ted Tyndall, District Manager with the North Carolina Division of Coastal Management (NCDCM), a Coastal Zone Management Act (CZMA) Consistency Determination and Consistency Certification is required for the proposed project due to the potential cumulative impact to the coastal environment both at Pivers Island and its immediate vicinity. An onsite meeting with the NCDCM, NCDWQ, NOAA's representatives, and the NCNERR is scheduled for 26 June 2003. The Town of Beaufort has been invited to attend the above-mentioned meeting.

Non-point source pollution will be controlled during construction by appropriate erosion and sedimentation controls, as required by Carteret County and the Town of Beaufort, and will be controlled after construction in accordance with the relevant municipal stormwater management requirements.

Based on the findings of this investigation as described in this Environmental Assessment, the proposed facility appears to be consistent to the maximum extent practicable with the enforceable policies of the North Carolina CAMA. However, this proposed project and related activities require a comprehensive CZMA Consistency Determination and Consistency Certification.

The CZMA must address each portion of the project to include, the new main laboratory and administration building, new kiosk, bridge repair, turtle pen and seawater supply system upgrades, and boat ramp and dock upgrades. This CZMA Consistency Determination and

Consistency Certification must be reviewed by the NCDCEM, whom will coordinate with applicable federal, state and local agencies for comments and clearances.

6.7 Wetlands

A preliminary on-site investigation was performed to assess the potential for the presence of jurisdictional wetlands in accordance with methods specified in the U.S. Army Corps of Engineers (COE), *Wetlands Delineation Manual (Technical Report Y-87-1, 1987)*, including interpretations specified by the COE (7 October 1991 and Memorandum from Major General Arthur E. Williams, Directorate of Civil Works, 6 March 1992), which is currently required by the Corps for wetlands determinations. A detailed on-site analysis was not conducted, but will be necessary in order to confirm permit requirements under Section 404 of the Clean Water Act.

The identification of wetlands is based on the mandatory technical criteria and methods as outlined in the 1987 Corps Manual. As defined (33 CFR § 328.3 (b)), jurisdictional wetlands include:

"...those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

In accordance with the COE methodology, the three mandatory technical criteria that define wetlands, and must be present under normal circumstances, include hydrophytic vegetation, hydric soils, and wetland hydrology. Therefore, the focus of the off-site wetland study was to review mapping and existing data regarding the subject site for evidence of the three criteria as outlined in the 1987 Corps Manual. The off-site study needs to be field verified by on-site analysis, to delineate areas showing positive evidence of hydrophytic vegetation, wetland hydrology, and hydric soils, which are jurisdictional wetlands.

Hydrophytic Vegetation: The presence of hydrophytic vegetation is generally defined in the Corps Manual when, under normal circumstances, more than 50 percent of the dominant species from all strata are obligate-wetland ("OBL", almost always found in wetlands), facultative-wetland ("FACW", usually found in wetlands), or facultative species ("FAC", species equally likely to be found in wetlands as uplands). Facultative-upland ("FACU") and upland ("UPL") species are less likely to be found in wetlands. For North Carolina, wetland indicators for plants are published in the National List of Plant Species that Occur in Wetlands: Northeast (Region 1) (U.S.F.W.S. Biol. Rep. 88(26.1)).

Wetland Hydrology: The Corps manual defines wetland hydrology as encompassing "all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an over-riding influence on characteristics of vegetation and soils due to

anaerobic and reducing conditions, respectively. Such characteristics are usually present in areas that are inundated or have soils that are saturated to the surface for sufficient duration to develop hydric soils and support vegetation typically adapted for life in periodically anaerobic conditions." The Manual acknowledges that hydrology is often the least exact of the parameters, and lists a number of primary field indicators that may be used to determine if wetland hydrology is present. These primary indicators include: visual observation of inundation, visual observation of soil saturation, watermarks on woody vegetation, drift lines, sediment deposits, and drainage patterns within wetlands.

The guidance documents published by the Corps on 7 October 1991 and 6 March 1992 provided further clarification on the use of the 1987 Manual, particularly with respect to the hydrology criterion. These documents specified threshold levels for the duration of saturation within the growing season for the hydrology criterion to be satisfied. Lacking specific data from the long-term monitoring of shallow groundwater wells, these guidance documents also clarified the use of the primary indicators of hydrology outlined in the 1987 manual, and stressed the cautious use of secondary indicators such as oxidized root channels, water stained leaves, soil survey data, and the FAC-neutral test.

Hydric Soils: The Corps manual identifies hydric soils as "...a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation." Listings of hydric soils and use of local soil survey mapping is often helpful in the identification of potential wetlands areas. Onsite soil evaluations are used to augment soil survey data, or to confirm mapping provided by local soil survey mapping. Soil colors and other characteristics can be used to identify the presence of hydric soils. Munsell Soil Color Charts are used to numerically classify soil colors; soil texture and other characteristics are also evaluated in the field. As defined in the Corps manual, mineral hydric soils are identified based on the color features immediately below the A-horizon or at a depth of 10 inches (whichever is shallower). Hydric mineral soils usually have one of the following features:

- (a) Matrix chroma of 2 or less in mottled soils
- (b) Matrix chroma of 1 or less in unmottled soils

While these characteristics generally reflect reducing conditions resulting from past anaerobic conditions, the existence of a hydric soil alone cannot be used to ascertain wetland hydrology. This is because the existing soil may only reflect a past relic condition in an otherwise drained area.

Background materials reviewed included the USGS topographic map, *Beaufort Quadrangle, North Carolina* (1949, photorevised 1983), the FWS wetlands map, *Beaufort Quadrangle, North Carolina* (1990), the SCS, *Soil Survey of Carteret County, North Carolina* (1987), and aerial photographs of the subject site.

According to the FWS wetland map, *Beaufort Quadrangle, North Carolina* (1990), Pivers Island is classified as upland (non-wetland). However, the maps special notes indicated that the island might include unclassified wetlands such as man-modified areas, non-photoidentifiable areas, and/or unintentional omissions. The area of the northern bridgehead across the body of water to the north of the island is classified on the map as a jurisdictional wetland (classification E2EMIN; or estuarine, intertidal, emergent, non-persistent).

During the site visit of 28 and 29 April 2003, three potential wetland areas were observed. These are: the northern tidal area in the vicinity of the southern bridgehead and the turtle pens (tidal marsh); the area in the vicinity of the docks on the eastern portion of the site (beach); and the land within the immediate vicinity of the northern bridgehead (combination of beach and tidal marsh).

Based on the findings of this investigation, a wetland delineation is required to determine the extent of jurisdictional wetlands within areas of the proposed project. The wetland determination process will require a comprehensive study, which must be reviewed by the COE. Wetlands permitting will be required for activities, which will result in direct impacts to wetlands. It is anticipated that any such impacts will be minor impacts subject to permitting under the Corps Nationwide permit system. A wetland delineation is scheduled for the week of 23 June 2003.

6.8 Floodplains

Executive Order 11988 - *Floodplain Management* (1977), requires federal agencies to determine whether any proposed federal action will occur in a floodplain, and stipulates procedures to be followed for any federal action to be located within a floodplain. The term "floodplain" is defined in the Executive Order to mean the lowland and relatively flat area adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, that area subject to a one percent (1%) or greater chance of flooding in any given year. The Federal Emergency Management Agency (FEMA) Flood Insurance Manual, dated 1985, indicates that the floodplain described in the Executive Order is, by definition, the 100-year floodplain. The FEMA regulations for Floodplain Management and Flood Hazard Identification (44 CFR 59 through 77) provide further clarification and were relied upon during this investigation.

Flood Insurance Rate Maps and Flood Hazard Boundary Maps, as prepared by FEMA, provide the usual and customary basis for determining whether a site occurs within a 100-year floodplain. Our review of FEMA Flood Insurance Rate Map (FIRM) *Community Panel Number 3753466396, Map #3720639600J* (2003), for Carteret County, North Carolina, reviewed on 28 April 2003 at the Town of Beaufort Public Works Department, indicated that a portion of the subject site is located within a floodplain (100-year floodplain). The site is located in Flood Zone AE (elevation of eight-foot/tidal seven-foot). This was consistent with the older FEMA FIRM *Community Panel Number 730040708E* (1998), which depicted the proposed project area within the 100-year floodplain (flood zone A8), Carteret County map of *Flood Zones* (2003), reviewed on 28 April 2003 in the Carteret County Mapping Department, and the State of North

Carolina Floodplain Mapping Information System, *Pivers Island, North Carolina (2003)*, obtained online on 15 April 2003.

According to the FEMA *Flood Insurance Study of Carteret County, North Carolina (1998)*, reviewed on 28 April 2003 at the Carteret County Planning Department, the dominant source of flooding within the immediate area of the proposed project site is wind driven surge generated in the Atlantic Ocean by tropical storms and hurricanes.

According to Mr. Brad Loar, with FEMA, interviewed via telephone on 21 May 2003, the above-mentioned FEMA maps for Pivers Island and the adjacent areas do not have velocity zones associated with identified floodplains.

Based on the findings of this investigation, the following portions of the proposed project are within a floodplain (100-year floodplain): New main laboratory and administration building, new kiosk, bridge repair, turtle pen and seawater supply system upgrades, and boat ramp and dock upgrades. The finished floor elevation of structures and mechanical equipment is to be above the base flood elevation to the extent feasible.

According to Mr. Loar, this proposed federal project is governed by NOAA's floodplain management guidance documents. As such, other considerations will be undertaken as per the DOC Administrative Order DAO 216-11, *Floodplain Management and Protection of Wetlands (1979)*. Design plans will be provided to both Carteret County and Town of Beaufort for review.

6.9 Endangered or Threatened Species and Critical Habitats

The Endangered Species Act of 1973 designates the FWS, as the lead agency with responsibility for protection of endangered and threatened species. The FWS regulations protect endangered and threatened fish, wildlife, plants, and critical habitats, and provide lists of protected species and habitats as specified at 50 CFR 17 222.23(a), 226, and 227.4.

The FWS recommends a search of their database and another maintained by the North Carolina Department of Natural Heritage (NCDNH). If either federally listed endangered or threatened species are found for the search area in either database, then the FWS must be contacted.

SEA, Ltd. accessed information directly by online services from the FWS *Federal Listing Endangered Species, Threatened Species and Species of Concern for Carteret County, North Carolina*, on 9 April 2003 and obtained current information from the database. This database listed nine federally listed endangered species and five federally listed threatened species, which are as follows:

<u>Status</u>	<u>Common Name</u>	<u>Scientific Name</u>
Endangered	Eastern cougar	<i>Puma concolor cougar</i>
Endangered	West Indian manatee	<i>Trichechus manatus</i>
Endangered	Hawksbill sea turtle	<i>Ertmochelys imbricata</i>
Endangered	Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>

Endangered	Leatherback sea turtle	<i>Dermochyls coriacea</i>
Endangered	Red-cockaded woodpecker	<i>Picoides borealis</i>
Endangered	Roseate tern	<i>Sterna dougalli</i>
Endangered	Shortnose sturgeon	<i>Acipenser brevirostrum</i>
Endangered	Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>
Threatened	American alligator	<i>Alligator Mississippians</i>
Threatened	Green sea turtle	<i>Chelonia mydas</i>
Threatened	Loggerhead Sea Turtle	<i>Caretta caretta</i>
Threatened	Piping Plover	<i>Charadrius melodus melodus</i>
Threatened	Seabeach amaranth	<i>Amaranthus pumilus</i>

The NCDNH maintains a separate, but similar database of endangered and endangered species.

SEA, Ltd. accessed information directly by online services from the NCDNH database, *Elements of Occurrence for the Beaufort Quadrangle*, on 9 and 15 April 2003 and obtained current information from the database. This database listed two federally listed endangered species and five federally listed threatened species, which are as follows:

<u>Status</u>	<u>Common Name</u>	<u>Scientific Name</u>
Endangered	West Indian manatee	<i>Trichechus manatus</i>
Endangered	Shortnose sturgeon	<i>Acipenser brevirostrum</i>
Threatened	American alligator	<i>Alligator mississippiensis</i>
Threatened	Loggerhead sea turtle	<i>Caretta caretta</i>
Threatened	Piping plover	<i>Charadrius melodus</i>
Threatened	Seabeach amaranth	<i>Amaranthus pumilus</i>
Threatened	Seabeach knotweed	<i>Polygonum glaucum</i>

SEA, Ltd. accessed information directly by online services from the NOAA database, *Endangered and Threatened Species and Critical Habitats under the Jurisdiction of the National Marine Fisheries Service, North Carolina*, on 5 June 2003 and obtained current information from the database. This database listed 10 federally listed endangered species and two federally listed threatened species, which are as follows:

<u>Status</u>	<u>Common Name</u>	<u>Scientific Name</u>
Endangered	Blue whale	<i>Balaenoptera musculus</i>
Endangered	Finback whale	<i>Balaenoptera physalus</i>
Endangered	Humpback whale	<i>Megaptera novaeangliae</i>
Endangered	Right whale	<i>Eubalaena glacialis</i>
Endangered	Sei whale	<i>Balaenoptera borealis</i>
Endangered	Sperm whale	<i>Physeter macrocephalus</i>
Endangered	Hawksnail sea turtle	<i>Eretmochelys imbricata</i>
Endangered	Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>
Endangered	Shortnose sturgeon	<i>Acipenser brevirostrum</i>
Endangered	Leatherback sea turtle	<i>Dermochelys coriacea</i>
Threatened	Green sea turtle	<i>Chelonia mydas</i>
Threatened	Loggerhead sea turtle	<i>Caretta caretta</i>

The FWS was queried via letter, dated 16 April 2003, pertaining to endangered and threatened species, designated critical habitats, wilderness areas, and natural area preserves within the vicinity of the proposed project area. According to Mr. Dale Suiter with the FWS Raleigh Field Office, interviewed by telephone, there does not appear to be any negative impact to any federally listed terrestrial species from activities at the proposed project areas. However, based upon the FWS clearance letter, dated 19 May 2003, there is a slight chance that the West Indian manatee may occupy waters in the vicinity of Pivers Island. The FWS bases this upon the manatee's migratory range and the existence of habitat conducive to the manatee. The FWS indicates that this manatee species, if present, is a seasonal inhabitant (from June through the end of September) and as such, steps must be taken to protect the manatee during construction. The FWS clearance letter, with the FWS *Precautions for General Construction in Areas Which May be Used by the West Indian Manatee in North Carolina* (undated), is enclosed in Appendix 2 of this report.

The NOAA was queried via letter, dated 18 April 2003, pertaining to endangered and threatened species or designated critical habitats either at the site or within the vicinity of the proposed project area. Their reply, dated 12 May 2003, indicated that no federally listed species would be affected by the proposed project. According to Dr. Jon Hare, with NOAA's Center for Coastal Fisheries and Habitat Research at the Beaufort Laboratory, no endangered and threatened species or designated critical habitats are known to occur either at the site or within the vicinity of the proposed project area. However, sightings of the loggerhead sea turtle, the leatherback sea turtle, and the green sea turtle have been reported within the estuary west of Radio Island and south of the Rachel Carson National Estuarine Research Reserve. Lighting and acoustical effects of activities around the bridgeheads and boat ramps and docks will be considered during the construction phases of the proposed project to assure the project has no effect on these species. However, as mentioned above, construction activities at shoreline project areas should be undertaken in a manner that reduces acoustical effects.

During a telephone interview with Dr. Ron Sechler, with NOAA's Habitat Conservation Office at the Beaufort Laboratory, further inquiry should be made through NOAA's Protected Species Division, with regard to endangered marine species.

The NOAA Protected Species Division was queried via letter, dated 14 May 2003, pertaining to federally listed endangered and threatened marine species, which may be present either at Pivers Island or its immediate vicinity. Their reply, undated (received 31 May 2003), the following protected species as occurring within coastal waters of North Carolina: blue whale; finback whale; humpback whale; right whale; sei whale; sperm whale; green sea turtle, hawksbill sea turtle; Kemp's ridley sea turtle; leatherback sea turtle; loggerhead sea turtle; and shortnose sturgeon. In their letter NOAA requested an impact assessment with regard to the above-mentioned marine species. According to NOAA, there are no designated critical habitats located within state waters. The impact assessment requested by NOAA was sent to the Protected Species Division on 9 June 2003. NOAA's letter is enclosed in Appendix 2 of this report. Based on our impact assessment, dated 9 June 2003, there appears to be no direct impact to federally listed marine species. NOAA's clearance is anticipated.

A summation of the impact assessment is as follows:

Based on research of natural resource records, interviews with species and habitat specialists, and review of other documentation the following marine species do not occur within the estuary proper and, therefore, would not be expected to be either directly or indirectly affected by the proposed project: blue whale, finback whale, humpback whale, right whale, sei whale, sperm whale, hawksbill sea turtle, or shortnose sturgeon.

Based on research of natural resource records, interviews with species and habitat specialists, and review of other documentation the following marine species do not occur within one mile of Pivers Island and, therefore, would not be expected to be either directly or indirectly affected by the proposed project: green sea turtle, leatherback sea turtle and loggerhead sea turtle.

The NCDNH was queried via letter, dated 16 April 2003, pertaining to endangered and threatened species, designated critical habitats, wilderness areas, and natural area preserves, open spaces, or conservation areas either at the site or within the vicinity of the proposed project area. Their reply, dated 2 May 2003, indicated that the proposed project will not adversely impact endangered or threatened species, or designated critical habitats. According to Dr. Harry E. LeGrand, Natural Heritage Program Zoologist with the North Carolina Division of Parks and Recreation (NCDPR), occurrences of rare species have been documented within the vicinity of Pivers Island; however, the majority of the reports have been on east Bird Shoal located at the Rachel Carson NCNERR. The NCDPR listed the West Indian manatee, loggerhead sea turtle, Kemp's ridley sea turtle, and piping plover as species that may possibly occur within the vicinity of Pivers Island. Dr. LeGrand stated that there are no significant natural communities or priority natural areas on Pivers Island. The clearance letter is enclosed in Appendix 2 of this report.

Based on Dr. LeGrand's letter, the proposed project areas for the new main laboratory and administration building and new kiosk are located on uplands, and given their distance to the shoreline, activities in these two areas will not affect natural heritage resources. The proposed project areas involving repair and upgrade of existing assets, including bridge repair, turtle pen and seawater supply system upgrades, and boat ramp and dock upgrades, will not directly affect natural heritage resources. The manatee and sea turtle species may be indirectly affected by equipment operating in and around the waters of the adjacent channels during construction and immediately after the construction.

The North Carolina Department of Inland Fisheries (NCDIF) was queried via letter, dated 16 April 2003, pertaining to endangered and threatened species, designated critical habitats or aquiculture protection areas either at the site or within the vicinity of the proposed project area. According to Mr. David McHenry, Northeast Coastal Region Coordinator with the North Carolina Wildlife Resources Commission (NCWRC), letter dated 5 May 2003, the West Indian manatee, the piping plover and the seabeach amaranth have been documented in the vicinity of Pivers Island. However, these species do not occur on the island proper or along its immediate shoreline. Also, the eastern painted bunting (*Passerina cris cris*), which is a federal species of concern, has been recorded within the immediate area of the northern bridgehead. The proposed

project areas for the new main laboratory and administration building and new kiosk will not affect natural heritage resources.

Based on consultation with NCWRC, further consultation with NOAA and NCDMF will be required with regard to shellfish and seagrass habitats, which may be present within the proposed project areas involving repair and upgrade of existing assets, including bridge repair, turtle pen and seawater supply system upgrades, and boat ramp and dock upgrades. Prior to construction, the area of the northern bridgehead should be monitored for the eastern painted bunting, which may be present at the site from mid-April through the end of September.

NOAA is currently mapping the shellfish and seagrass beds within the vicinity of the proposed project areas and the NCNERR is currently conducting eastern painted bunting monitoring within the vicinity of the northern bridgehead. The NCWRC clearance letter is enclosed in Appendix 2 of this report.

The North Carolina Department of Marine Fisheries (NCDMF) was queried via letter, dated 16 April 2003, pertaining to endangered and threatened species, designated critical habitats or aquaculture protection areas either at the site or within the vicinity of the proposed project area. Their reply, dated 28 April 2003, indicated that the proposed project will not adversely impact endangered or threatened species, or designated critical habitats. According to Mr. Mike Street with the NCDMF, there are no designated nurseries, research sanctuaries or aquaculture operations within the vicinity of the Pivers Island. During a visit to Mr. Street's office on 29 April 2003, he discussed the bridge project's possible impact on a known shellfish (oyster) reef located within the western vicinity of the northern bridgehead. According to Mr. Street, shellfish and seagrass habitats may be located in unmapped areas around Pivers Island. Mr. Street indicated the proposed project areas for the new main laboratory and administration building and new kiosk will not affect natural heritage resources.

Based on consultation with NCDMF, further consultation will be required with regard to shellfish and seagrass habitats, which may be present within the proposed project areas involving repair and upgrade of existing assets, including bridge repair, turtle pen and seawater supply system upgrades, and boat ramp and dock upgrades. The NCDMF clearance letter is enclosed in Appendix 2 of this report. NOAA is currently mapping the shellfish and seagrass beds within the vicinity of the proposed project areas.

With regard to the eastern cougar, American alligator, red-cockaded woodpecker, roseate tern, shortnose sturgeon, and rough-leaved loosestrife, these terrestrial species were not identified by the FWS or state agencies as occurring within the vicinity of Pivers Island. Therefore a habitat impact analysis was not accomplished.

A habitat impact analysis for each species mentioned by the FWS and state agencies is as follows:

The West Indian manatee does not inhabit the coastal areas of North Carolina; however, this manatee is known to migrate to the coastal waters of the state. According to the FWS habitat data, dated 6 March 2003, the West Indian manatee has been sighted in the

vicinity of Carteret County's coastal areas associated with tidal water within the past 20 years. Information obtained during a telephone interview with Dr. Gordon Thayer, Assistant Director of the NOAA operations at Pivers Island, on 21 April 2003, this manatee species does not frequent the North Carolina coast. According to the NC Wildlife Resource Commission (NCWRC), letter dated 5 May 2003, this species is does not occur on the island proper or along its immediate shoreline. According to Dr. Jon Hare, also with the NOAA Beaufort Research Laboratory (Pivers Island), interviewed by telephone on 8 May 2003, this manatee species is not documented within the immediate vicinity of Pivers Island. On 5 June 2003, Dr. David Johnson, Director of the NOAA operations at Pivers Island, and Mr. Doug Coker, with the NCNERR, confirmed that no reports of manatees occurring within the Pivers Island environs have been recorded. Based on this information, the West Indian manatee does not occur within the vicinity of the proposed project, and as such activities at Pivers Island would not be expected to affect this manatee species or its critical habitats.

The Kemp's ridley sea turtle does inhabit the coastal waters of North Carolina. However, according to the FWS habitat data, dated 6 March 2003, the occurrence of this sea turtle is not documented within the vicinity of coastal areas of Carteret County associated with tidal areas. The absence of this sea turtle species within the immediate vicinity of Pivers Island was confirmed by Dr. Gordon Thayer, Assistant Director of the NOAA Beaufort Research Laboratory, on 21 April 2003 during a telephone interview. In addition, according to Dr. Jon Hare, with the NOAA Beaufort Research Laboratory, interviewed by telephone on 8 May 2003, this sea turtle species is not documented within the immediate vicinity of Pivers Island (the island and the area of the northern bridgehead is not documented as a Kemp's ridley sea turtle nesting or basking area). According to the NCWRC, letter dated 5 May 2003, this species does not occur on the island proper or along its immediate shoreline. Based on this information, the proposed project would not be expected to affect the Kemp's ridley sea turtle or its critical habitats.

The loggerhead sea turtle does inhabit the coastal waters of North Carolina. However, according to the FWS habitat data, dated 6 March 2003, the occurrence of this sea turtle is not documented within the vicinity of coastal areas of Carteret County associated with tidal areas. The absence of this sea turtle species within the immediate vicinity of Pivers Island was confirmed in telephone interviews with both Dr. Gordon Thayer, Assistant Director of the NOAA Beaufort Research Laboratory, on 21 April 2003, and Dr. Jon Hare, with the NOAA Beaufort Research Laboratory, on 8 May 2003. This sea turtle species is not documented within the immediate vicinity of Pivers Island (the island and the area of the northern bridgehead is not documented as a loggerhead sea turtle nesting or basking area). The absence of loggerhead sea turtle nesting areas on Pivers Island and the northern bridgehead area was confirmed by Ms. Amy Sauls, Education Coordinator with the Rachel Carson NCNERR, during a telephone interview on 7 May 2003. However, based on a telephone interview with Ms. Susan Lovelace, also with the Rachel Carson NCNERR, on 9 May 2003, juveniles of this species have been sighted within the estuary. The loggerhead sea turtle does frequent the Rachel Carson NCNERR. According to the NCWRC, letter dated 5 May 2003, this species does not occur on the island proper or along its immediate shoreline. Based on this information, the loggerhead

sea turtle does not occur within the immediate vicinity of the proposed project, and as such activities at Pivers Island would not be expected to affect this sea turtle species or its critical habitats.

The piping plover inhabits the coastal areas of North Carolina associated with tidal areas, and is known to frequent areas within the vicinity of Pivers Island. This bird species arrives in the area in late March or early April and departs the area by early September. During the site visit of 28 and 29 April 2003, monitoring for the piping plover was conducted, however none were sighted. The absence of this bird species on Pivers Island and its immediate vicinity was confirmed by Ms. Susan Lovelace, Education Coordinator with the Rachel Carson NCNERR, during a telephone interview on 5 May 2003. Ms. Lovelace stated that the occurrence of piping plover nesting has not been recorded during monitoring conducted on Pivers Island; however, this bird species does nest on islands within the Rachel Carson NCNERR. According to the , letter dated 2 May 2003, this species does not occur on the island proper or along its immediate shoreline. This was confirmed by the NCWRC, letter dated 5 May 2003. Based on this information, the proposed project would not be expected to affect the piping plover or its critical habitats.

Seabeach amaranth does occur within costal areas associated with tidal areas of Carteret County. During the site visit of 28 and 29 April 2003, SEA conducted a preliminary reconnaissance of the island and the areas adjacent to the northern bridgehead, and did not find this plant species. The absence of seabeach amaranth on Pivers Island and the northern bridgehead area was confirmed by Ms. Susan Lovelace, Education Coordinator with the Rachel Carson NCNERR, during a telephone interview on 5 May 2003. Ms. Lovelace stated that the occurrence of seabeach amaranth has not been documented on Pivers Island. According to the NCWRC, letter dated 5 May 2003, this species does not occur on the island proper or along its immediate shoreline. Based on this information, the proposed project would not be expected to affect the seabeach amaranth or its critical habitats.

Seabeach knotweed does occur within coastal areas associated with tidal water of Carteret County. During the site visit of 28 and 29 April 2003, SEA conducted a preliminary reconnaissance of the island and the areas adjacent to the northern bridgehead, and did not find this plant species. The absence of seabeach knotweed on Pivers Island and the northern bridgehead area was confirmed by Ms. Amy Sauls, Education Coordinator with the Rachel Carson NCNERR, during a telephone interview on 7 May 2003. Ms. Sauls stated that the occurrence of seabeach knotweed has not been recorded during monitoring conducted on the Pivers Island. According to the NCWRC, letter dated 5 May 2003, this species does not occur on the island proper or along its immediate shoreline. Based on this information, the proposed project would not be expected to affect the seabeach knotweed or its critical habitats.

A habitat impact analysis for each species mentioned by the NOAA, with the exception of the species mentioned in the analysis above, is as follows:

The blue whale, finback whale, humpback whale, right whale, sei whale, and sperm whale would not be expected to occur within the estuary. According to Mr. Doug Coker with the Rachel Carson National Estuarine Research Reserve (NERR), there have been no sightings of whales within the vicinity of Pivers Island or the Rachel Carson NERR, which extends into the Beaufort Inlet. According to Dr. Vicki Thayer, with the Duke University Marine Laboratory, interviewed via telephone on 6 June 2003, there have been no sightings of whales within the estuary proper. Based on this information, the proposed project would not be expected to affect the blue whale, finback whale, humpback whale, right whale, sei whale, or sperm whale or these species' critical habitats.

The shortnose sturgeon does inhabit the coastal waters of North Carolina. However, according to the FWS habitat data, dated 6 March 2003, the occurrence of this sturgeon is not documented within the vicinity of Carteret County, but is known to inhabit large brackish rivers and estuaries, but spawns in freshwater areas. The absence of this fish species within the vicinity of Pivers Island was confirmed by Mr. Mike Street with the NCDMF, during an interview at his office on 29 April 2003. According to the NCWRC, letter dated 5 May 2003, this species does not occur on the island proper or along its immediate shoreline. Based on this information, the proposed project would not be expected to affect the shortnose sturgeon or its critical habitats.

The FWS, NCDNHH (through the NCDPR), NCDIF (through the NCWRC) and NCDMF have issued clearance letters on 19 May 2003, 2 May 2003, 5 May 2003 and 28 April 2003 respectively. Based on these clearance letters, the proposed project areas for the new main laboratory and administration building and new kiosk will not affect natural heritage resources.

Further consultation is required with regard to shellfish and seagrass habitats, which may be present within the proposed project areas involving repair and upgrade of existing assets, including bridge repair, turtle pen and seawater supply system upgrades, and boat ramp and dock upgrades.

Information received from NOAA indicated that construction activities at shoreline project areas, construction of the new bridge and upgrade of the turtle pens with sea water system, as well as upgrade of the boat ramp and docks should be undertaken in a manner that reduces acoustical effects.

Based upon the FWS clearance letter, dated 19 May 2003, there is a slight chance that the West Indian manatee may occupy waters in the vicinity of Pivers Island. The FWS bases this upon the manatee's migratory range and the existence of habitat conducive to the manatee. The FWS indicates that this manatee species, if present, is a seasonal inhabitant (from June through the end of September) and as such, steps must be taken to protect the manatee during construction. The FWS clearance letter, with the FWS *Precautions for General Construction in Areas Which May*

be Used by the West Indian Manatee in North Carolina (undated), is enclosed in Appendix 2 of this report.

Based on investigatory results, it is our opinion that the proposed project will not directly affect, or have an adverse affect upon either threatened or endangered species, or related critical habitats of such species.

6.10 Wildlife Refuges

National Wildlife Refuges (NWR) located in North Carolina are listed in a database maintained by the FWS. According the FWS database, reviewed online on 10 April 2003, there are 10 NWRs within the State of North Carolina. Of these, one, the *Cedar Island NWR*, is located in Carteret County. However, according to the USGS topographic map, *Morehead City Quadrangle, North Carolina* (1990) and the FWS map, *Cedar Island National Wildlife Refuge, Carteret County, North Carolina*, (1961), and the FWS pamphlet, *Cedar Island National Wildlife Refuge* (1998), this designated wildlife refuge is located approximately 21.5 miles to the northeast of the subject site.

As discussed above, the FWS, NCDNH, NOAA, NCDIF, and NCDMF were queried with regard to designated critical habitats, wilderness areas, natural area preserves, aquiculture protection areas, and other conservation areas. Based on this analysis, no such areas were found either on the subject site or within its immediate vicinity.

No evidence has been found in the preliminary review of property deed records to indicate conservation easements or other deed restrictions on the subject property. However, a title search has not been performed in order to confirm absence of recorded limitations on land use at this site.

Based on this review of appropriate databases, maps and land deeds, coupled with both federal and state agency review, it appears that the proposed project is not located in an officially designated wildlife preserve or wildlife refuge. As such, no further investigation with regard to wildlife preserves or wildlife refuges is warranted at this time.

6.11 Wilderness Areas

The Wilderness Act of 1964 designates the U.S. Department of Agriculture (USDA) and the U.S. Department of the Interior (USDI) as the agencies with jurisdiction and responsibility for managing wilderness areas. Four federal offices manage designated wilderness areas: The USDA, Forestry Service (USFS); and the USDI, Bureau of Land Management (BLM), Fish and FWS and National Park Service (NPS). Officially designated wilderness areas within the State of North Carolina are shown on maps and listed in databases prepared by the USFS and the NPS. Our review of these maps and databases provides an appropriate and customary basis for determination of whether a site is located near or within a designated wilderness area, according to practices recommended by the USFS and NPS.

According to the National Wilderness Preservation System (NWPS) online database, reviewed on 10 April 2003, there are 12 designated wilderness areas within the State of North Carolina. Of these, 11 are listed by the USFS and one is under the FWS. No designated wilderness areas under the jurisdiction of the BLM and NPS were found in the NWPS online database. Review of the listing of these areas, obtained through the NWPS database, indicated the subject site is not located within a wilderness area, national forest or national park. Of the 12 designated wilderness areas, one, the *Pocosin Wilderness*, which is within the *Croatan National Forest*, is located in Carteret County. However, according to the USGS topographic map, *Morehead City Quadrangle, North Carolina* (1990), a designated wilderness area is located approximately 13.2 miles to the northwest of the subject site.

SEA, Ltd. accessed information directly by online services from the USFS and NPS on 10 April 2003 and obtained current information from the database. The subject site was not found to occur within any of the designated wilderness areas.

According to an NPS document, *Wilderness Recommendation, Cape Lookout National Seashore, Carteret County, North Carolina* (1985), the Cape Lookout National Seashore is a potential wilderness area. However, according to the USGS topographic map, *Morehead City Quadrangle, North Carolina* (1990), and the NPS pamphlet, *Cape Lookout National Seashore, North Carolina* (1993, reprint 2000), this area is located approximately 1.8 miles to the south-southeast of the subject site, with the closest boundary located at Shackleford Banks, which is a designated Natural Zone. Based on maps and documents reviewed, coupled with a telephone interview conducted 18 April 2003, with Mr. Michael Rakard, Resource Manager with the NPS at Cape Lookout National Seashore, the proposed project will not impact the area of Shackleford Banks.

As discussed above, the FWS, NOAA, NCDNH, NCDIF, and NCDMF were queried with regard to designated critical habitats, wilderness areas, natural area preserves, aquiculture protection areas, and other conservation areas. Based on this analysis, no such areas were found either on the subject site or within its immediate vicinity.

Based on this review of appropriate databases, maps and land deeds, coupled with both federal and state agency review, it appears that the proposed project is not located in an officially designated wilderness areas. As such, no further investigation with regard to wildlife preserves or wildlife refuges is warranted at this time.

6.12 Wild and Scenic Rivers

In October of 1968, the federal Wild and Scenic Rivers Act pronounced,

It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values, shall be preserved in free-flowing condition, and that they and their immediate

environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dams and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.

Designation as a national wild and scenic river is not designation as a national park or wilderness area, and does not halt development and use of a river. The goal of a wild and scenic river designation is to preserve the character of a river. Uses compatible with the management goals of a particular river are allowed; change is expected to happen. Development not damaging to the outstanding resources of a designated river, or curtailing its free flow, are usually allowed. The term "living landscape" has been frequently applied to wild and scenic rivers. Each river designation and management plan is unique, and is meant to protect the character of the river while also preserving the property rights of landowners along the river.

According to the NPS National Wild and Scenic River online database, reviewed on 10 April 2003, there are four designated wild and scenic rivers within the State of North Carolina. Two are managed by the USFS and two are managed by the NCDPR. Of the four designated wild and scenic rivers, none are located within Carteret County.

SEA, Ltd. accessed information directly by online services from the NPS on 10 April 2003 and obtained current information from the database. The subject site was not found to occur within any of the designated wild and scenic rivers, or proposed wild and scenic rivers.

The NPS was queried via letter, dated 16 April 2003, pertaining to national seashores, wild and scenic rivers, and other designated preservation areas either at the site or within the vicinity of the proposed project area. Their reply has not been received as of the date of this report.

According to the EPA online database of watershed profiles, reviewed on 21 April 2003, there are no American Heritage Rivers within the Bouge-Core Sounds portion of the White Oak River Basin.

SEA, Ltd. accessed information directly by online services from the EPA on 21 April 2003 and obtained current information from the database. The subject site was not found to occur within any of the American Heritage Rivers or associated river basins.

According to the wild and scenic rivers database maintained by the NPS, there are no such rivers or river segments within one mile of the proposed action. As such, no further investigation regarding NNLs is warranted at this time.

6.13 National Estuarine Research Reserves

The CZMA, through NOAA, provides funding for acquisition of critical coastal areas. In addition to a parallel state program, the North Carolina Coastal Reserve Program (CRP), authorized under the 1989 amendments to the CAMA, identifies critical areas in need of

protection and facilitates the acquisition of largely undisturbed land for preservation as natural areas.

According to a database maintained by NOAA, there are four designated NCNERRs within the State of North Carolina. According to NOAA, the Rachel Carson NCNERR is within the immediate vicinity of the subject site.

Additionally, the NCDRC database lists five designated Coastal Reserves (CR) in the State of North Carolina CRP. The NCDRC map, *North Carolina Coastal Reserves Including the National Estuarine Research Reserves* (2000), reviewed at the Rachel Carson NCNERR on 29 April 2003, did not indicate CRs within Carteret County. This map includes federally listed NERRs and those listed as North Carolina NERRs (NCNERRs).

According to the NCDRC the reserve covers 2,675 acres.

The islands and estuarine waters at the Rachel Carson site are strongly influenced by river and inlet dynamics and twice-daily tides. The range of tidal changes at Middle Marsh, the low salinity variation of the western section, and topography of the entire site have created a diverse and productive estuarine system. Habitats found within the site are tidal flats, flooded salt marshes, ocean beach, subtidal soft bottoms, hard surfaces, dredge spoil areas, sand dunes, shrub thicket and maritime forest. More than 200 species of birds have been observed at the site, which is located within the Atlantic Flyway. Twenty-three species are considered rare or decreasing in number. This site is an important feeding area for Wilson's plovers in the summer and piping plovers in the winter. The shrub thicket of Middle Marsh supports an egret and heron rookery. In addition to feral horses, the river otter, gray fox, raccoon and marsh rabbit inhabit the islands. The American bottlenose dolphin swims deep waters around islands, along with 52 species of fish. Forty-seven invertebrate species common to the site include mollusks and worms.

According to the NCDRC map, *Rachel Carson NCNERR Component* (1983), the boundary for the reserve is located 718 \pm feet southeast and south of the subject site, which is an area known as Town Marsh and Bird Shoals.

According to Ms. Susan Lovelace, Education Coordinator with NCDRC's Rachel Carson NCNERR, who was interviewed by telephone on 5 May 2003, this project will not affect the reserve.

Based on the scope of the proposed project, this intended purpose of portions of the plan are designed to enhance the Rachel Carson NCNERR.

SEA, Ltd. accessed information directly by online services from NOAA National Estuarine Research Reserve System (NERRS) database on 10 April 2003 and obtained current information from the database. The subject site was not found to occur within the designated NCNERRs.

Based on this review of appropriate databases and maps, it appears that the proposed facility is not located within either a designated NERR or CR. As such, no further investigation regarding these NCNERRs or CRs is warranted at this time.

6.14 National Natural Landmarks

A national natural landmark (NNL) is a nationally significant natural area that has been designated by the Secretary of the Interior. To be nationally significant, a site must be one of the best examples of a type of biotic community or geologic feature in its physiographic province. Such examples include terrestrial and aquatic ecosystems; geologic features, exposures, and landforms that record active geologic processes or portions of earth history; and fossil evidence of biological evolution. It is a goal of the program to identify, recognize, and encourage the protection of sites containing the best remaining examples of ecological and geological components of the nation's landscape. Landmarks are designated on both public and private land, with the program designed to have the concurrence of the owner or administrator.

The program was established by the Secretary of the Interior in 1962, under authority of the Historic Sites Act of 1935, and administered by the NPS. The revised National Natural Landmark Program Regulations, 36 CFR, Part 62, were published in the Federal Register 12 May 1999. To date, 587 sites have been designated as NNLs.

According the NNL database maintained by the NPS, there are five NNLs within the State of North Carolina.

SEA, Ltd. accessed information directly by online services from the NPS and the NWI online database on 10 April 2003 and obtained current information from these databases. The subject site was not found to occur within any of the designated NNL areas, or their immediate vicinity.

The NPS was queried via letter, dated 16 April 2003, pertaining to NNLs, national seashores, wild and scenic rivers, and other designated preservation areas either at the site or within the vicinity of the proposed project area. Their reply, dated 9 May 2003, indicated that there are no NNLs within the immediate vicinity of Pivers Island. According to Ms. Heather Germaine, National Natural Landmarks Coordinator with the NPS, the closest NNL is Bear Island, part of Hammocks Beach State Park located over 25 miles along the coast to the southwest.

According to the NNLs database maintained by the NPS, there are no NNLs within one mile of the proposed action. As such, no further investigation regarding NNLs is warranted at this time.

6.15 National Seashores

National seashores located in State of North Carolina are listed in a database maintained by the NPS. According the NPS database, reviewed online on 15 April 2003, there are two national seashores located within the State. Of these, one, the Cape Lookout National Seashore, is located in Carteret County. However, according to the USGS topographic map, *Morehead City*

Quadrangle, North Carolina (1990) and the NPS pamphlet, *Cape Lookout National Seashore, North Carolina* (1993, reprint 2000), and the NPS document, *Wilderness Recommendation, Cape Lookout National Seashore, Carteret County, North Carolina* (1985), this designated national seashore is located approximately 1.8 miles to the south-southeast of the subject site, with the closest boundary located at Shackleford Banks, which is a designated natural zone.

SEA, Ltd. accessed information directly by online services from the NPS and the NWI online database on 15 April 2003 and obtained current information from these databases. The subject site was not found to occur within any of the designated national seashore areas, or their immediate vicinity. This was verified via telephone interview on 18 April 2003, with Mr. Michael Rakard, Resource Manager with the NPS's Cape Lookout National Seashore. According to Mr. Rakard, given the location and distance of the proposed projects on Pivers Island, activities at the subject site would not impact the area of Shackleford Banks or other areas of the resource, which are located farther east along what is known as the Outer Banks.

The NPS was queried via letter, dated 16 April 2003, pertaining to national seashores, wild and scenic rivers, and other designated preservation areas either at the site or within the vicinity of the proposed project area. Their reply has not been received as of the date of this report.

According to the national seashores database maintained by the NPS, there are no national seashores within one mile of the proposed action. As such, no further investigation regarding national seashores is warranted at this time.

6.16 Open Spaces and Conservation Areas

Federal open space is typically designated on public lands managed by BLM, and are acquired within urban areas for open space purposes, and conceivably could be used in order to establish an urban wildlife preserve.

SEA, Ltd. accessed information directly by online services from the BLM on 10 April 2003 and obtained current information from the database. The subject site was not found to occur within any of the designated open spaces areas. As such, no further investigation regarding open spaces is warranted at this time.

BLM maps do not indicate the presence of officially designated open spaces areas within the State of North Carolina.

SEA, Ltd. accessed information directly by online services from the North Carolina Department of Parks and Recreation (NCDPR) on 18 April 2003 and obtained current information from its database of listed state natural areas. This database listed three such designated areas within the State. The closest listed area was the Sandhills Nature Preserve, which is located in the south central part of the State (Southpines, North Carolina). One significant area, the Theodore Roosevelt State Natural Area, is located on Bogue Banks and is over 9.1 miles southwest of Pivers Island. Based on the search results, no listed resources were located within one mile of the subject site.

As discussed above, the FWS, NCDNH, NOAA, NCDIF, and NCDMF were queried with regard to designated critical habitats, wilderness areas, natural area preserves, aquaculture protection areas, and other conservation areas. Based on this analysis, no such areas were found either on the subject site or within its immediate vicinity.

No evidence has been found in property deed records to indicate conservation easements or other deed restrictions on the subject property.

Based on this review of appropriate databases, maps and land deeds, coupled with both federal and state agency review, it appears that the proposed project is not located in an officially designated open space. As such, no further investigation with regard to designated open spaces or conservation areas is warranted at this time.

6.17 Historic and Cultural Resources

The National Historic Preservation Act of 1966 authorizes the Secretary of the Interior to manage a National Register of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. This National Register of Historic Places (NRHP) is in the custody of the State Historic Preservation Office (SHPO), as approved by the NPS. Protection of Historic and Cultural Properties by the Advisory Council on Historic Preservation is outlined in 36 CFR 800 including procedures for implementation of the NEPA.

SEA, Ltd. accessed information directly by online services from the NPS National Register Information System (NRIS) on 10 April 2003 and obtained current information from the database. Based on the search results, no listed historic resources were located within one mile of the subject site.

According to Ms. Patricia Suggs, Director with the Beaufort Historic Association, interviewed via telephone on 17 April 2003, the proposed project will not affect the Beaufort Historic District, which is listed on the NRHP (file #1974-05-06), or other historic or cultural resources within this district.

According to the North Carolina State Historic Preservation Office (SHPO), *North Carolina State Historic Preservation Office Assistance to Carteret County* (1999), obtained online from the North Carolina Department of Historic Resources (NCDHR) on 10 April 2003, an architectural survey of the Town of Beaufort was conducted in the early 1970s, which resulted in the Town's nomination in 1974 as a NRHP historic district. A later study included the Town's African American neighborhoods and an update of the historic district survey.

The SHPO maintains listings and related maps showing known historic sites and sites which are listed or eligible for listing in the NRHP. A one-mile area of potential effect (APE) was reviewed on these maps. The APE was selected based on topography and height of the proposed structures, practicality and other considerations. This analysis was limited to preliminary

evaluation of data readily available to us at the time of our review. Review of such maps found six previously identified historic resource or potential historic resources within an approximate one-mile radius of the subject site. The following table lists the number of architectural sites identified within a one-mile radius.

Number of Architectural Resources Within One Mile of the Subject Site

<u><0.25 miles</u>	<u>0.25 to 0.5 miles</u>	<u>0.5 to 1.0 miles</u>
1	3	2

The six sites noted above are addressed below.

A visual impact analysis of the above-mentioned sites was conducted. This analysis is addressed below.

No additional resources were identified by the NCDCCR. The NCDCCR, SHPO clearance, letter dated 16 May 2003, is enclosed in Appendix 2 of this report.

SEA, Ltd. accessed information directly by online services from the NPS NRIS on 10 April 2003 and obtained current information from the database. Based on the database search results NRHP listed resources were located within an approximate one-mile radius of the subject site. The following historical resources were found (listed in the NRHP or eligible for listing in the NRHP):

Architectural Resources Listed on the NRHP or Eligible to be Registered on the NRHP

<u>Historic Site File Number</u>	<u>Distance from the Site (miles)</u>			<u>NRHP</u>	<u>Eligible for NRHP</u>
	<u><0.25</u>	<u>0.25 to 0.5</u>	<u>0.5 to 1.0</u>		
1973-03-14			x	yes	yes
1973-05-07		x		yes	yes
1974-05-06	x			yes	yes
1974-04-08		x		yes	yes
1984-12-20		x		yes	yes
1989-02-01			x	yes	yes

A viewshed survey conducted for each above listed property and the resultant visual impact analysis is as follows.

Beaufort Historic District (NRHP #1974-05-06) is located approximately 750 feet to the east of the subject site. Pivers Island is visible from this historic district. However, based on location and topographical features, such as wooded areas, and existing structures on the eastern portion of the island, the proposed new main laboratory and administration building and new kiosk will not be visible from the historic district. Other proposed projects for repair and upgrade of existing assets, including bridge repair, turtle pen and seawater supply system upgrades, and boat ramp and dock upgrades, would not be expected to impact the historic district.

Jacob Henry House (NRHP #1973-03-07) is located on Front Street and over 1,320 feet to the east of the subject site. Pivers Island is visible from this historic resource. However, based on location and topographical features, such as wooded areas, and existing structures on the eastern portion of the island, the proposed new main laboratory and administration building and new kiosk will not be visible from the Jacob Henry House. Other proposed projects for repair and upgrade of existing assets, including bridge repair, turtle pen and seawater supply system upgrades, and boat ramp and dock upgrades, would not be expected to impact the historic district.

Gibbs House (NRHP #1973-03-14) is located on Front Street and over 3,960 feet to the east of the subject site. Pivers Island is visible from this historic resource. However, based on location and topographical features, such as wooded areas, and existing structures on the eastern portion of the island, the proposed new main laboratory and administration building and new kiosk will not be visible from the Gibbs House. Other proposed projects for repair and upgrade of existing assets, including bridge repair, turtle pen and seawater supply system upgrades, and boat ramp and dock upgrades, would not be expected to impact the historic district.

Old Burying Ground (NRHP #1974-05-08) is located approximately 2,200 feet to the east of the subject site. Pivers Island is not visible from this historic district. Based on location and topographical features, such as wooded areas, and buildings within the western half of the Town of Beaufort, and existing structures on the eastern portion of the island, the proposed new main laboratory and administration building and new kiosk will not be visible from the Old Burying Ground. Other proposed projects for repair and upgrade of existing assets, including bridge repair, turtle pen and seawater supply system upgrades, and boat ramp and dock upgrades, would not be expected to impact the historic district.

Carteret County Home (NRHP #1984-12-20) is located over one mile to the northeast of the subject site. Pivers Island is not visible from this historic resource. Based on location and topographical features, such as wooded areas, and buildings within the southwestern portion of the Town of Beaufort, and existing structures on the eastern portion of the island, the proposed new main laboratory and administration building and new kiosk will not be visible from the Carteret County Home. Other proposed projects for repair and upgrade of existing assets, including bridge repair, turtle pen and seawater supply system upgrades, and boat ramp and dock upgrades, would not be expected to impact the historic district.

Cape Lookout Coast Guard Station (NRHP #1989-02-01) is located on Core Banks, within the Cape Lookout National Seashore, which is over 17 miles to the southeast of the subject site. Pivers Island is not visible from this historic resource. Based on distance the proposed new main laboratory and administration building and new kiosk will not be visible from the Cape Lookout Coast Guard Station. Other proposed projects for repair and upgrade of existing assets, including bridge repair, turtle pen and seawater supply

system upgrades, and boat ramp and dock upgrades, would not be expected to impact the historic district.

Based on investigatory results, it is our opinion that the proposed project will not significantly or materially affect the visual conditions of the Beaufort Historic District or any of the five potential historic properties listed above.

SEA, Ltd. accessed information directly by online services from the NPS NRIS on 10 April 2003 and obtained current information from the database. Based on the database search results potentially eligible historic resources were located within an approximate one-mile radius of the subject site. The following historical resources were found:

NONE FOUND, OTHER THAN THOSE LISTED ABOVE.

With regard to archeological sites, all files were checked for those archeological sites identified within one mile of the proposed site. However, only archeological sites that might be disturbed by the actual construction activity are subject to protection under the NHPA. Based on our review of the NPS, NRIS, maps and interviews with state and municipal agencies, the proposed facility is not within an archeological site. No previously identified archeological sites were found to be within the footprint, presumed staging area, or access to the subject site. The following archeological sites are believed to be of potential concern:

NONE FOUND.

Based on the distance between the resource and the proposed project, as well as existing surface features and conditions between the resource and the proposed project, there appears to be no potential for effect on any historic resources in the vicinity.

On 16 April 2003, SEA, Ltd. queried NCDCCR, SHPO. In a telephone interview on 19 May 2003, Ms. Renee Gledhill-Earley, Project Review Coordinator with the SHPO, stated that the interagency comment period had ended and that clearance for the proposed project has been granted. The NCDCCR, SHPO clearance, letter dated 16 May 2003, is enclosed in Appendix 2 of this report.

The new main laboratory and administration building will not be visible from the designated historic district bounds. Design for projects that will be visible from the historic district will be considered, especially with regard to lighting or other features. Design consideration will be given for the new kiosk, new bridge, and upgrade of existing turtle pen and seawater supply system, and boat ramp and docks.

Copies of design plans will be provided to both Carteret County and Town of Beaufort for review.

6.18 Native American Cultural Resources

The facility will comply with all applicable state, Indian tribal, or local rules, regulations, or ordinances.

Executive Order 13007 - Indian Sacred Sites, dated 24 May 1996, requires certain federal agencies to: 1) accommodate access to, and ceremonial uses of, Indian sacred sites by Indian religious practitioners; and 2) avoid adversely affecting the physical integrity of such sacred sites. Information published by the Bureau of Indian Affairs (BIA), is used to interpret guidelines with respect to the identification, designation, and protection of Indian religious sites.

Indian religious sites may be maintained confidentially by the respective Indian tribes, or may be publicly known. Indian religious sites may be listed on the NRHP in accordance with the NHPA, and in accordance with the terms of the Native American Graves Protection and Repatriation Act.

According to the BIA, the appropriate and customary method of determining whether an activity will affect an Indian religious site is to: 1) review the NRHP for documentation of such sites used by federally recognized tribes; and 2) inquire with the applicable federally recognized tribes as to their knowledge of any such sites of interest to their tribe within the vicinity of the proposed action.

SEA, Ltd. accessed information directly by online services from the NPS NRIS on 10 April 2003 and obtained current information from the database. Based on this database, neither historic nor cultural resources were found either at the subject site or its immediate vicinity.

On 16 April 2003, SEA, Ltd. queried Dr. Jeffrey J. Crow, Ph.D., Director of the North Carolina SHPO; however, no reply has been received as of the date of this report. In a telephone interview on 6 May 2003, Ms. Renee Gledhill-Earley, Project Review Coordinator with the SHPO, stated that the interagency comment period had ended on 5 May 2003. No comments had been received as of 6 May 2003.

Based on the review of the project plan, on-site analysis, database search results coupled with maps and data obtained from online files within the NRIS, historical or archeological resources found within an approximate one-mile radius of the subject site will not be affected by the subject property.

According to the BIA, one federally recognized Indian tribe, the Eastern Band of Cherokee Indians (EBCI), exists within the State of North Carolina.

According to Public Law #97-473, which lists federally recognized tribal governments, the only Native American tribe within the State is the EBCI.

A letter from Mr. James Bird, Tribal Historic Preservation Officer for the EBCI, letter dated 16 July 2001, included a listing by state of counties considered to be within the EBCI's aboriginal

territory. Carteret County did not appear within counties listed in EBCI's aboriginal territory. On 18 April 2003, SEA, Ltd. queried Mr. Bird with regard to the proposed project. A telephone interview was conducted with Ms. Lee Clauss with the EBCI Tribal Historic Preservation Office (THPO) on 7 May 2003. Ms. Clauss stated that the EBCI has no interests in the North Carolina Coastal Plain or purview to the coastal areas of the state. Although the Catawba Indian Nation is not considered to have aboriginal territory in the State of North Carolina, Ms. Clauss suggested contacting them because they are a coastal plain nation and are federally recognized.

The Catawba Indian Nation was queried via letter, dated 7 May 2003, with regard to historic and cultural resources within the vicinity of the proposed project area. Follow-up on 9 May 2003 with the THPO, Dr. Wenonah G. Haire (Tribal Historic Preservation Officer) indicated an interagency review of the project is in progress. In order to complete the review, the THPO requested additional information on 10 June 2003. SEA, Ltd., provided requested documentation on 13 June 2003 and historic and cultural resources assessment on 16 June 2003. The Catawba Indian Nation's reply has not been received as of the date of this report.

According to Mr. Carl Waldaman, *The Atlas of North American Indians* (2000), the geographical location of the Catawba Indian Nation is in the Catawba River area of eastern North Carolina, eastern South Carolina, and western Tennessee. No Indian land claims for the Catawba Indians were noted within the State of North Carolina.

Based on the above research, Indian religious sites were not found within the proposed site or immediate vicinity of the subject site, and it appears that the proposed action will not affect any Native American religious sites. However, a clearance letter from the Catawba Indian Nation is pending.

6.19 National Historic Landmark

National historic landmarks (NHLs) are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in either illustrating or interpreting the heritage of the United States. Fewer than 2,500 historic places bear this national distinction. There are 37 NHLs listed within the state of North Carolina.

SEA, Ltd. accessed information directly by online services from the NPS online database on 6 May 2003 and obtained current information from the database. According the NPS, there are no NHLs within Carteret County.

According to the NHL database maintained by the NPS, there are no NHLs within one mile of the proposed action. As such, no further investigation regarding these sites is warranted at this time.

6.20 American Battlefields

The American Battlefield Protection Program (ABPP) promotes the preservation of significant historic battlefields associated with wars on American soil. The goals of the program are to protect battlefields and sites associated with armed conflicts that influenced the course of history, to encourage and assist all Americans in planning for preservation, management and interpretation of these sites, and to raise awareness of the importance of preserving battlefields and related sites for future generations. The ABPP focuses primarily on land use, cultural resources and site management.

According to the NCDPR pamphlet and map, *Fort Macon State Park* (undated), obtained online, Fort Macon State Park is located in Atlantic Beach, and east of Point Bogue, approximately 1.4 miles to the south-southwest of the subject site. Construction of the fort began in 1826 and the fort was first garrisoned in 1834. Fort Macon provided coastal defense from 1834 through 1903 and was used during World War II for defense of merchant ships against submarines. The fort was the site of two Civil War battles, which occurred in mid-1861 and mid-1862. Given the distance and location of Fort Macon State Park, activities at the proposed project site would not be expected to impact this resource.

According to the NPS and State databases, there are no American battlefields within one mile of the proposed action. As such, no further investigation regarding these sites is warranted at this time.

6.21 Historic Landscapes

Historic landscapes can range from thousands of acres of rural tracts to a small homestead with a front yard of less than one acre. Like historic buildings and structures, these special places reveal aspects of our country's origins and development through their form and features and the way they were used. Almost every historic property has a landscape component. Thus the Beaufort Historic District may be considered a historic landscape.

Based on the findings of the historic and cultural resources reviewed above, the subject site will not impact the Beaufort Historic District. As such, no further investigation regarding these sites is warranted at this time.

6.22 Rivers and Trails

The Nationwide Rivers Inventory (NRI) is a listing of more than 3,400 free-flowing river segments in the United States that are believed to possess one or more outstanding or remarkable natural or cultural values judged to be of more than local or regional significance. These areas contain free-flowing, relatively undisturbed river segments. The NRI is a source of information for statewide river assessment and federal agencies involved with stream-related projects. It also

serves as a listing of plant and animal species for restoration efforts similar on a similar section of river.

According to the NRI, which was updated in 1982 via the Eastern Wild and Scenic River Study (Phase I), there are a total of 104 designated river segments within the State of North Carolina. Of these, three are located within Carteret County and are segments of the White Oak River, which is located over 39 miles west of the subject site.

SEA, Ltd. accessed information directly by online services from the NPS NRI on 18 April 2003 and obtained current information from the database. Based on the search results, no listed historic resources were located within one mile of the subject site.

The NPS was queried via letter, dated 18 April 2003, pertaining to wild and scenic rivers, and other designated rivers, trails and conservation areas either at the site or within the vicinity of the proposed project area. Their reply has not been received as of the date of this report.

According to the NRI and the wild and scenic rivers database maintained by the NPS, there are no designated rivers or river segments within one mile of the proposed action. As such, no further investigation regarding these sites is warranted at this time.

6.23 State Parks

The North Carolina State Parks Act of 1987 established the State Park System, which includes 28 state parks, three state natural areas and four state recreation areas. These areas are considered to be of benefit to the human environment and may be of local or regional significance by virtue of either natural heritage or cultural and historical context.

SEA, Ltd. accessed information directly by online services from the on 18 April 2003 and obtained current information from the database. Based on the search results, no listed resources were located within one mile of the subject site. As such, no further investigation regarding these sites is warranted at this time.